

REMARKS/ARGUMENTS

First, the undersigned attorney of the Applicant thanks Examiner Michael Safavi and Examiner Gay Spahn for the courtesy of listening to the undersigned attorney's explanation of the Applicant's proposed response to the July 22, 2005 Office Action during a telephonic interview on Wednesday, October 12, 2005.

In the specification,¹ the paragraphs [0002], [0005], [0045] and [0046] have been amended to correct minor editorial problems kindly pointed out by the Examiner on pages 9-10 of the July 22, 2005 Office Action.

The paragraphs [0028], [0030] and [0032] of the specification have been amended to add references to the cross-sectioning lines 3B-3B, 4B-4B, 5B-5B, which have been added to FIGS. 3A, 4A and 5A, respectively, as per the Examiner's request in the July 22, 2005 Office Action.

The paragraphs [0036] and [0059] of the specification have been amended to include the U.S. patent application Serial Number for the co-pending application, 10/625,071 ("the '071 Application") and its U.S. patent application publication number, which became available after the present application was filed. The '071 Application has been incorporated by reference in its entirety into the present application.

The paragraph [0057] of the specification has been amended to include the description of reference numeral 88 shown in FIG. 6, which was inadvertently omitted previously. In view of the statement at the end of this paragraph that "this embodiment

¹ It is respectfully noted that all paragraph numbers of the specification cited in this Amendment correspond to the paragraph numbers appearing in U.S. Patent Application Publication No. US 2005/0016093 A1 associated with the present application.

can be further modified in accordance with the teachings and principles discussed above with respect to embodiments 10, 10A, 50, 60 and 70,” the amendment to this paragraph is supported by element 28 in FIG. 2 and the related text in the paragraph [0047].

The paragraph [0062] of the specification has been amended to prevent the potential confusion between Examples 5-7 of the present application and their corresponding Examples 7-9 of the ‘071 Application which has been incorporated by reference into the present application.

The paragraph [0064] of the specification has been amended to include the proper names for reference numerals 92 and 94 as kindly pointed out by the Examiner on page 10 of the July 22, 2005 Office Action.

In amended FIG. 3A, the number “244103.1” at the bottom of the figure has been deleted, and appropriate labels and arrows for cross-sectioning line 3B-3B have been added.

In amended FIG. 4A, appropriate labels and arrows for cross-sectioning line 4B-4B have been added.

In amended FIG. 5A, the number “244103.1” at the bottom of the figure has been deleted, and appropriate labels and arrows for cross-sectioning line 5B-5B have been added.

In amended FIG. 7, the unit for displacement in parentheses, (mm), has been deleted. It is respectfully submitted that, while the displacement values in FIG. 7 are indicative of the measure of strain, the numerical values for displacement as shown in

FIG. 7 are provided only for the purpose of comparison between the prestressed and non-prestressed results.

Upon entry of this Amendment, Claims 1-66 will be pending in the present application. Of those pending claims, Claims 6-12, 15-22, 28, 32-36 and 38-41 have been withdrawn. Claims 42-66 have been newly added by this Amendment to better capture the invention as disclosed in the specification which incorporates by reference the contents of the '071 Application. In particular, the characteristic lengths in mm for Examples 3-9 in TABLE 3 and the paragraph [0028] of U.S. Patent Application Publication No. US 2005/0019542 A1 ("the '542 Publication") for the incorporated '071 Application support the newly added elements of Claims 42-66.

It is respectfully submitted that no new matter has been added by these amendments to the specification, drawings and claims of the present application. Favorable consideration and allowance of all of the pending claims in view of the foregoing amendments and the following remarks are respectfully requested.

Applicant respectfully responds to the Office Action dated July 22, 2005 as follows:

Election/Restrictions:

In the July 22, 2005 Office Action, the Examiner continues to deem proper both of the election-of-species requirement with respect to the species or prestressed assemblies and species of tension member, and made the same final.

In addition, the Examiner did not agree that Claim 41 is readable on the elected species of FIG. 1 and the species of tension bolt(s). Instead, the Examiner takes the

position that Claim 41 clearly reads on the species of FIG. 6. In response, Applicant has withdrawn Claim 41 from consideration.

In view of the Examiner's restriction requirement having been made final, it is respectfully submitted that the Applicant retains the right to present Claims 6-12, 15-22, 28, 32-36 and 38-41 in one or more divisional applications.

Information Disclosure Statement:

In response to the Examiner's objections to the Information Disclosure Statement previously submitted on July 22, 2003, Applicant respectfully submits a Supplemental Information Disclosure Statement, along with Form PTO/SB/08B citing relevant references, a copy of those references, and the required fees. In addition, Applicant respectfully responds to the Examiner's objections as follows:

On page 7 of the July 22, 2005 Office Action, the Examiner stated that the Information Disclosure Statement submitted by the Applicant on July 22, 2003 was in compliance with the provisions of 37 C.F.R. § 1.97, except for the two submissions listed as Cite No. 28 and Cite No. 30: a document entitled "Mission Area: Structural Blast Mitigation" ("the Mission Area Document"), and a reference entitled "Prestressed Concrete: A Fundamental Approach," by Edward Nawy ("the Nawy Reference"), respectively.

More specifically, the Examiner stated that she has not considered the Mission Area Document since no date of publication has been listed on the Information Disclosure Statement and the Examiners are not supposed to consider submissions that do not list a date.

The Applicant respectfully responds to the Examiner's objection by reiterating the explanation already contained in the July 22, 2003 Information Disclosure Statement. It is respectfully submitted that the Applicant authored the Mission Area Document prior to the date of invention of the subject matter disclosed in the present application and submitted this document to a governmental entity. However, the Applicant does not know whether this document was ever published by such governmental entity as set forth under 35 U.S.C. §§ 102/103.

In this connection, it is noted that the same document was submitted by the Applicant to the U.S. Patent Office as one of the references cited in the Information Disclosure Statement for U.S. Patent Application Serial No. 10/076,971 ("the '971 Application"). The '971 Application was published by the U.S. Patent Office as U.S. Patent Application Publication No. US 2003/0145534 A1 on August 7, 2003, after the filing date of the present application. Accordingly, the Mission Area Document would have been available to the public through the U.S. Patent Office as of this publication date of the '971 Application. Applicant is not aware of any earlier date this document would have been made available to public.

Thus, it is unknown to the Applicant as to whether the Mission Area Document is indeed a prior art publication. The Applicant nevertheless discloses this document to comply with its duty of disclosure in the event that such article is indeed found to be a prior art publication. It is respectfully requested that the Examiner consider the Mission Area Document.

The Examiner also stated that the Nawy Reference was not considered since a copy of the reference did not accompany the filing of the Information Disclosure Statement. The Applicant apologizes for this inadvertent oversight and hereby respectfully submits a copy of the relevant portions of the Nawy Monograph for the Examiner's consideration.

Drawings:

In the July 22, 2005 Office Action, the Examiner requires that the number "244103.1" at the bottom of FIG. 3A and FIG. 5A be deleted. In response, Applicant respectfully submits replacement sheets, as well as an annotated marked-up copy showing change, for revised FIGS. 3A and 5A, in which the number "244103.1" at the bottom of these figures has been deleted.

The Examiner also requires that line 3B-3B, line 4B-4B and line 5B-5B be shown in FIGS. 3A, 4A and 5A, respectively, to show where the cross-sections for FIGS. 3B, 4B and 5B are coming from. In response, Applicant respectfully submits replacement sheets, as well as annotated marked-up copy showing change, for revised FIGS. 3A, 4A and 5A showing line 3B-3B, line 4B-4B and line 5B-5B, respectively.

In addition, the Examiner objected to the drawings because reference numeral 88 shown in FIG. 6 does not appear to be described in the specification. In response, the Applicant has amended the paragraph [0057] of the specification to add in the description the reference numeral 88 shown in FIG. 6, which was inadvertently omitted previously. In view of the statement at the end of the paragraph [0057] that "this embodiment can be further modified in accordance with the teachings and principles

discussed above with respect to embodiments 10, 10A, 50, 60 and 70,” the amendment to this paragraph is supported by element 28 in FIG. 2 and the related text in the paragraph [0047].

In view of the foregoing amendments to the drawings and the specification, the Applicant respectfully requests that all of the Examiner’s objections to the drawings be withdrawn.

If any of the changes to the drawings is not acceptable to the Examiner, Applicant respectfully requests that the undersigned attorney be notified and informed of any required corrective action immediately.

Specification:

The Examiner objects to the disclosure because of various informalities the Examiner identified on pages 9-10 of the July 22, 2005 Office Action. The Applicant respectfully submits that the foregoing amendments to the specification adequately address all of the Examiner’s objections. Accordingly, it is respectfully requested that all of the Examiner’s objections to the disclosure be withdrawn.

Claim Rejections - 35 U.S.C. § 112:

The Examiner rejects Claims 1-5, 13, 14, 23-27, 29-31 and 37 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Furthermore, the Examiner rejects the same claims under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. As the ground for these Section 112 rejections, the Examiner takes the position that the disclosure of the present

application does not appear clear and complete as to how the prestressed foam glass tile has or is able to obtain a prestress compression of 1,000 psi or greater and particularly 1,000 psi to 5,000 psi. The Applicant respectfully disagrees and traverses the Examiner's Section 112 rejections for the following reasons.

As noted above and also in the paragraphs [0036] and [0059] of the present application, the co-pending '071 Application has been incorporated by reference into the present application. It is also respectfully noted that the incorporated co-pending application has been published as U.S. Patent Application Publication No. US 2005/0019542 A1 ("the '542 Publication"). An application for a patent when filed may incorporate "essential material" (i.e., that which is necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode) by reference to . . . (2) a U.S. patent application publication, or (3) a pending U.S. application). MPEP 608.01(p). By submitting the Serial Number and the Publication Number of the co-pending '071 Application, the Applicant respectfully submits that the essential materials from the '071 Application are properly incorporated by reference by the present application.

As noted by the paragraph [0036] of the specification, the incorporated '071 Application discloses a strong, high density foam glass tile having small pore sizes having, *inter alia*, compression strength ranging from 2,000 to 14,600 lb./sq. in. or psi in TABLE 3 and the related paragraphs [0063]-[0066] of the '542 Publication. More specifically, Examples 5-9 of the '071 Application show that the foam glass tiles having

the compression strength of upto 12,500 psi or greater can be achieved prior to being in a prestressed condition.

While the amount of prestress level to produce a prestressed foam glass tile may be arbitrary, it is well known to a person skilled in the art that the optimum amount of prestress level would make the tensile strength comparable to the compression strength. In the present case, the optimum prestress level can be achieved at about 40% of the compression strength. For example, for a prestressed foam glass tile having a compression strength of 2,500 psi prior to being in a prestressed condition, the corresponding optimum prestress strength is approximately 1,000 psi; for the one having a compressional strength of 12,500 psi prior to being in a prestressed condition, the corresponding optimum prestress strength is approximately 5,000 psi, etc. Of course, under the present invention, it is still advantageous over prior art to apply any amount of prestress level--less or greater than the optimum prestress level at roughly 40% of compression strength, e.g., 10%, 20%, 30%, or 50% of compression strength prior to being in a prestress condition--to produce prestressed foam glass tiles. Accordingly, it is respectfully submitted that the present application incorporating by reference the '071 Application makes a clear and complete disclosure as to how the prestressed foam glass tile having a compression strength of 10,000 psi prior to being in a prestress condition may require a prestress strength of 1,000 psi or greater and particularly 1,000 psi to 5,000 psi or greater, in compliance with the requirements of 35 U.S.C. § 112, first and second paragraphs. The Applicant respectfully requests that the Examiner's Section 112 rejections be withdrawn.

Claim Rejections - 35 U.S.C. § 103:

In the July 22, 2005 Office Action, the Examiner rejected Claims 1-5, 23-27 and 29-31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,324,037 to Grady, II ("the '037 Patent") in view of either U.S. Patent No. 3,292,316 to Zeinetz ("the '316 Patent") or U.S. Patent No. 4,450,656 to Lagendijk ("the '656 Patent") when considering U.S. Patent No. 4,124,365 to Williams et al. ("the '365 Patent") or U.S. Patent No. 3,056,184 to Blaha ("the '184 Patent"). Furthermore, the Examiner rejected Claims 1-5, 13 and 14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,430,397 to Ellis ("the '397 Patent") in view of either the '316 Patent or the '656 Patent when considering the '365 Patent or the '184 Patent. In addition, the Examiner rejected Claims 23-27, 29-31 and 37 under 35 U.S.C. § 103(a) as being unpatentable over the '397 Patent in view of either the '316 Patent or the '656 Patent when considering either the '365 Patent or the '184 Patent as applied to Claims 1-5, 13 and 14, and further in view of the '037 Patent. The Applicant respectfully traverses these prior art rejections for the following reasons.

As discussed above in connection with the Section 112 rejections, for the foam glass tiles having a compression strength of between 2,500 psi and 12,500 psi, or greater prior to being in a prestressed condition, the optimum prestress strengths may range between 1,000 psi and 5,000 psi, or greater. Independent Claims 1 and 23 of the present application as amended herein require a prestressed foam glass tile having a compression strength of 10,000 psi or greater prior to being in a prestressed condition and a prestress strength (or prestress compression) of 1,000 psi or greater. This claim

limitation is supported by Examples 5-7 as shown in TABLE 1 of the present application (corresponding to Examples 7-9 of the incorporated '071 Application) and par. [0062] of the specification of the present application.

On the other hand, no other reference cited by the Examiner in connection with the prior rejection discloses or even suggests a prestressed foam glass tile having a compressional strength of 10,000 psi or greater prior to being in a prestressed condition. In fact, the only reference disclosing a foam glass product having a compressional strength over 2,500 psi is the '365 Patent and it only discloses the compressional strengths of 5,000 to 8,000 psi (Col. 1, lines 38), less than 10,000 psi. Furthermore, nowhere in the '365 Patent is there any teaching or suggestion of prestressing a foam glass tile under any amount of prestress compression. Nor do any of the other prior art of record teach or suggest prestressing of foam glass tiles under any amount of prestress compression. Accordingly, the '365 Patent, either alone or in combination with any of the other prior art of record, does not teach or even suggest a prestressed foam glass tile having a compression strength of 10,000 psi or greater prior to being in a prestressed condition and a prestress compression of 1,000 psi or greater, as required by independent Claims 1 and 23 of the present application as amended herein.

To establish *prima facie* obviousness of a claimed invention under 35 U.S.C. § 103(a), all of the claim limitations must be taught or suggested by the prior art. MPEP 2143.03. However, none of the references cited by the Examiner in connection with the prior art rejection discloses or even suggests a prestressed foam glass tile having a compression strength of 10,000 psi or greater prior to being in a prestressed condition

and a prestress strength of 1,000 psi or greater as required by independent Claims 1 and 23. Accordingly, the '037 Patent, the '316 Patent, the '656 Patent, the '365 Patent, the '184 Patent and the '397 Patent, either separately or in any combination, do not render independent Claims 1 and 23, as well as their dependent claims, obvious. Therefore, it is respectfully requested that the Examiner's rejection of independent Claims 1 and 23 and their dependent claims (Claims 2-5, 13, 14 and Claims 24-27, 29-31, 37, respectively) over prior art be withdrawn and that these Claims be allowed over the '037 Patent, the '316 Patent, the '656 Patent, the '365 Patent, the '184 Patent and the '397 Patent.

There is an additional independent reason why the rejected claims should be allowed over the cited prior art. The '365 Patent, the only reference disclosing a foam glass product having a compressional strength over 2,500 psi in non-prestressed condition (but still less than 10,000 psi), suggests production of foam glass in the form of hollow elongate cylinders so that it can be used as conduit such as sewer pipe, telephone pole, or power line (Col. 1, lines 14-25). Unlike in the case of foam glass tiles, prestressing of these foam glass hollow elongate cylinders to be used as conduit, telephone poles, etc. would not be desirable, nor is it technically feasible or economical. Accordingly, the '365 Patent does not provide any suggestion or motivation to combine its teaching with the teachings of other references which might disclose or suggest prestressing of non-foam glass material (such as the '037 Patent suggesting prestressing of concrete).

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available

to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. MPEP 2143. However, there is no suggestion or motivation in the art to combine the teachings of the '365 Patent with the teachings of any other cited references to meet the foregoing aspect of the claimed invention. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP 2143.01. Unless there is some objective reason to combine the teachings of the references, the fact that modifications of the prior art to meet the claimed invention would have been well within the ordinary skill of the art at the time the claimed invention was made (because the references relied upon teach that all aspects of the claimed invention were individually known) is not sufficient to establish a *prima facie* case of obviousness. *Id.* As discussed above, the '365 Patent does not provide any suggestion or motivation to combine its teachings with the teachings of any other cited references that might disclose or suggest prestressing. Hence, it is respectfully submitted that the teachings of the '365 Patent cannot be combined with the teachings of any other cited references to render any of the pending claims obvious.

Newly added independent Claims 42 and 54 require a prestressed foam glass tile having (1) a prestress strength of 1,000 psi or greater and (2) an average pore size, as measured based on the distance between two farthest points of pore surface, of 1.0 mm or less. As discussed above, 1,000 psi is the optimum prestress strength for a prestressed foam glass tile having a compression strength of 2,500 psi prior to being in a prestressed condition. The only one reference among those cited by the Examiner in connection

with the prior art rejections that purports to disclose a foam glass product having the compression strength greater than 2,500 psi is the '365 Patent. However, as noted above, the '365 Patent does not teach or suggest prestressing of a foam glass tile under any amount of prestress compression. Furthermore, the foam glass product disclosed by the '365 Patent contains elongated bubbles with the range of about 2 mm to about 5 cm (see Col. 2, lines 28-31). In other words, the '365 Patent does not disclose or suggest a prestressed foam glass tile having an average pore size, as measured based on the distance between two farthest points of pore surface, of 1 mm or less, as required by independent Claims 42 and 54. Accordingly, the '037 Patent, the '316 Patent, the '656 Patent, the '365 Patent, the '184 Patent and the '397 Patent, either separately or in any combination, do not render independent Claims 42 and 54, as well as their respective dependent claims, obvious. Therefore, it is respectfully requested that newly added Claims 42-67 be allowed over the '037 Patent, the '316 Patent, the '656 Patent, the '365 Patent, the '184 Patent and the '397 Patent.

* * *

In view of the foregoing amendments and remarks, Applicant respectfully requests that a timely Notice of Allowance with respect to all of the pending claims be issued in this case.

Included herewith is a check in the amount of \$725.00 to cover the fees for one unpaid independent claim in excess of three ($\$100.00 \times 1$) and for 25 unpaid claims in excess of twenty ($\$25.00 \times 25 = \625.00) for a small entity. Also included herewith is a separate check in the amount of \$180.00 to cover the fees for submitting the

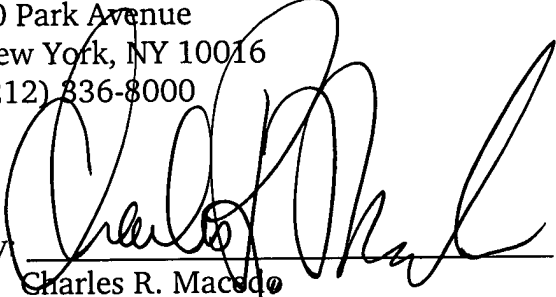
Appl. No. 10/625,102
Amdt. dated Oct. 19, 2005
Reply to Office Action of July 22, 2005

Supplemental Information Disclosure Statement. No additional fees or extensions of time are believed to be due in connection with filing of this Amendment. However, authorization is given hereby to charge Deposit Account No. 01-1785 for any deficiency in fees necessary to preserve the pendency of the subject application, or to credit the same in case of overpayment.

Respectfully submitted,

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Dated: New York, New York
October 19, 2005

By 
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Amendments to the Drawings:

The attached sheets of drawings include changes to FIGS. 3A, 4A, 5A and 7. These sheets, which include all of the figures, FIGS. 1-7, replace the original sheets including FIGS. 1-7. In FIG. 3A, the number "244103.1" at the bottom of the figure has been deleted, and appropriate labels and arrows for line 3B-3B have been added. In FIG. 4A, appropriate labels and arrows for line 4B-4B have been added. In FIG. 5A, the number "244103.1" at the bottom of the figure has been deleted, and appropriate labels and arrows for line 5B-5B have been added. In FIG. 7, the unit for displacement in parentheses, (mm), has been deleted.

Attachments:	Replacement Sheet for FIGS. 1, 2, 3A and 3B
	Replacement Sheet for FIGS. 4A, 4B, 5A and 5B
	Replacement Sheet for FIGS. 6 and 7
	Annotated Sheet for FIGS. 1, 2, 3A and 3B showing change
	Annotated Sheet for FIGS. 4A, 4B, 5A and 5B showing change
	Annotated Sheet for FIGS. 6 and 7 showing change

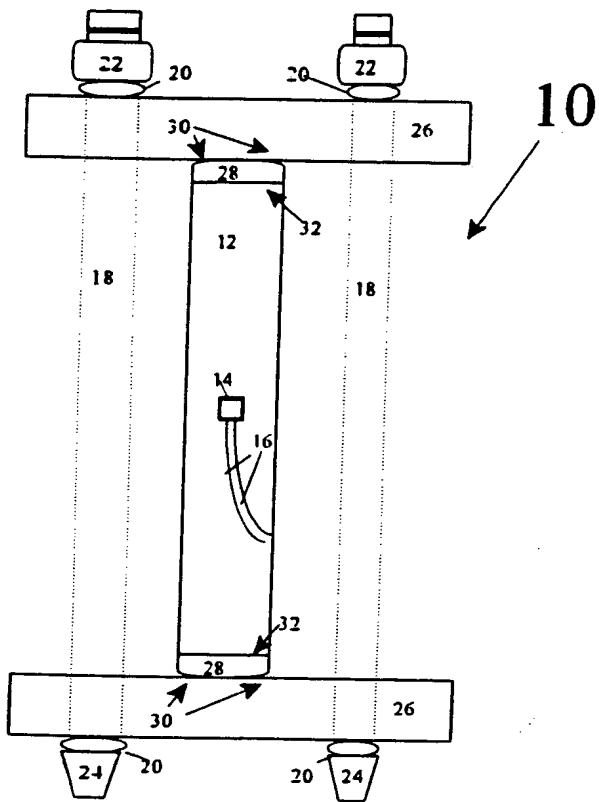


Fig. 1

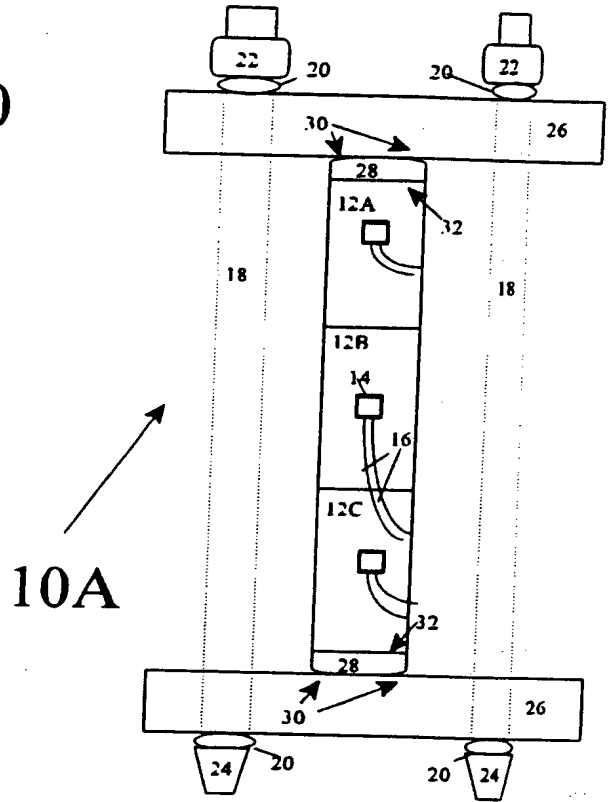


Fig. 2

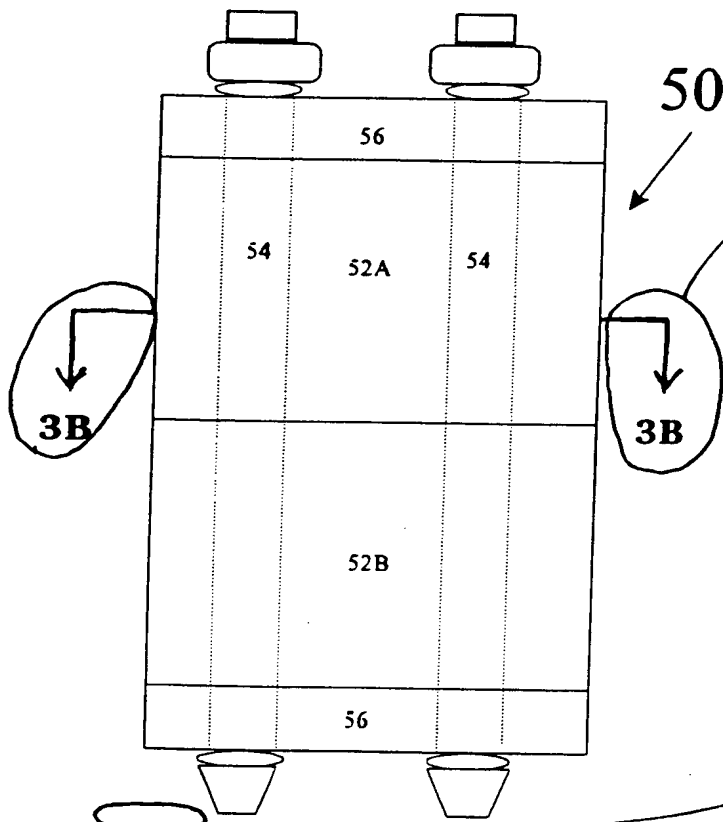


Fig. 3A

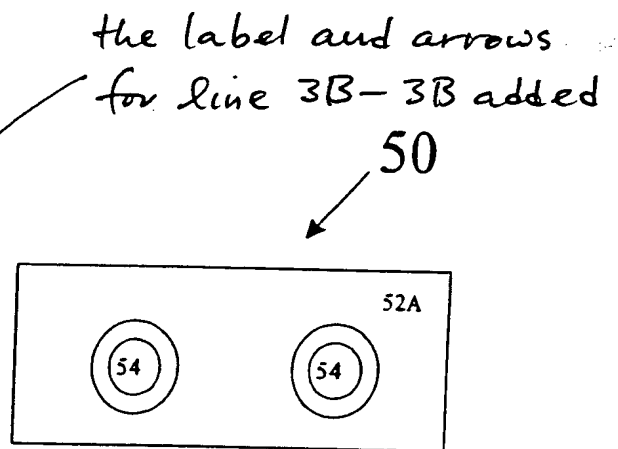


Fig. 3B

the number "294103.1"
deleted

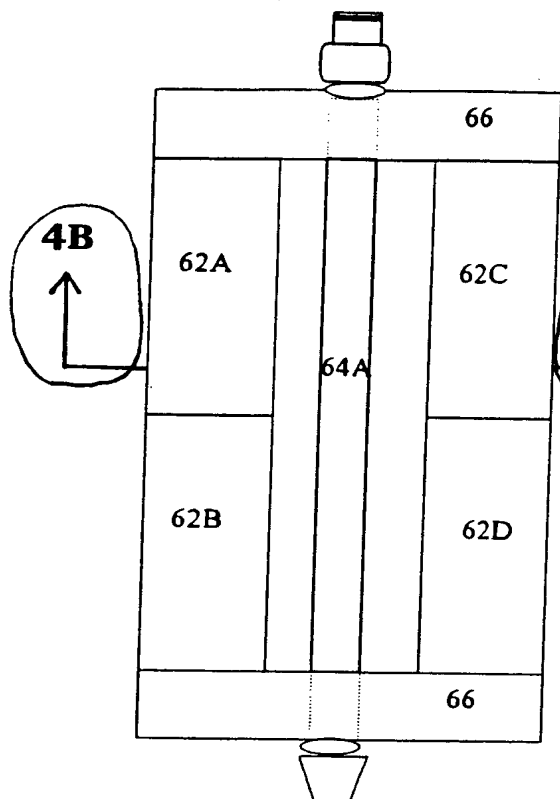


Fig. 4A

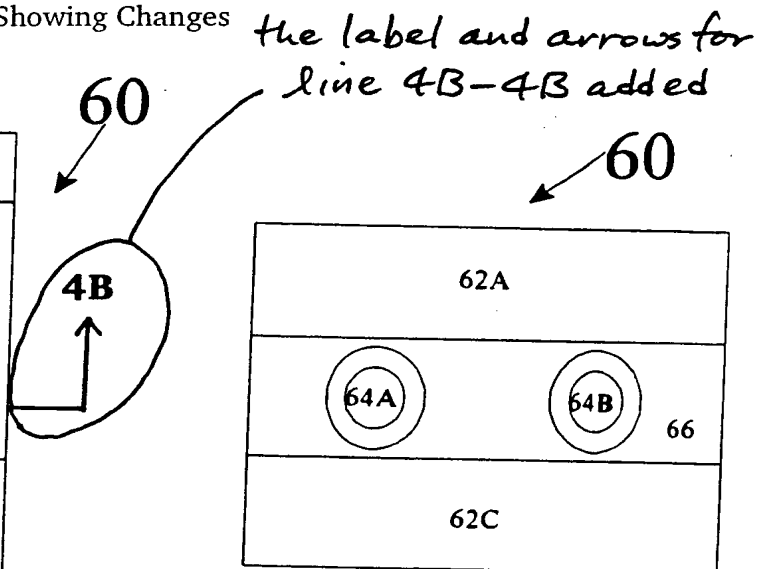


Fig. 4B

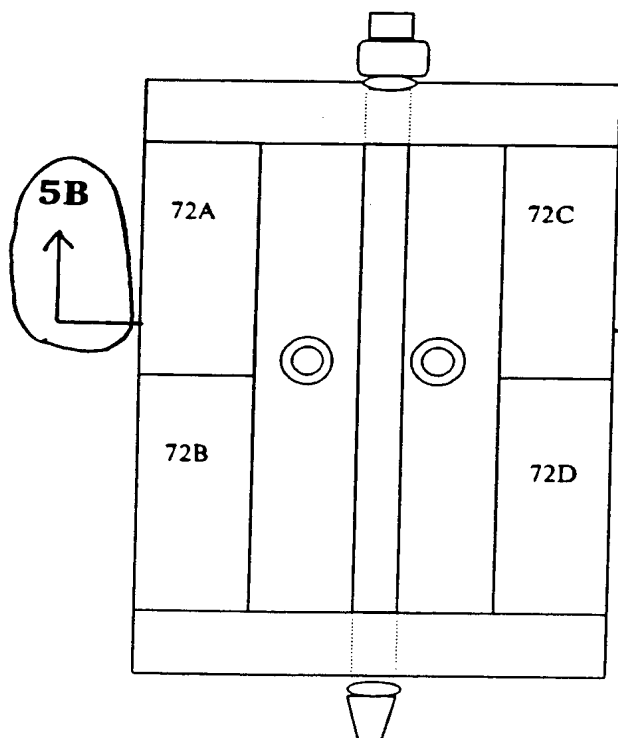


Fig. 5A

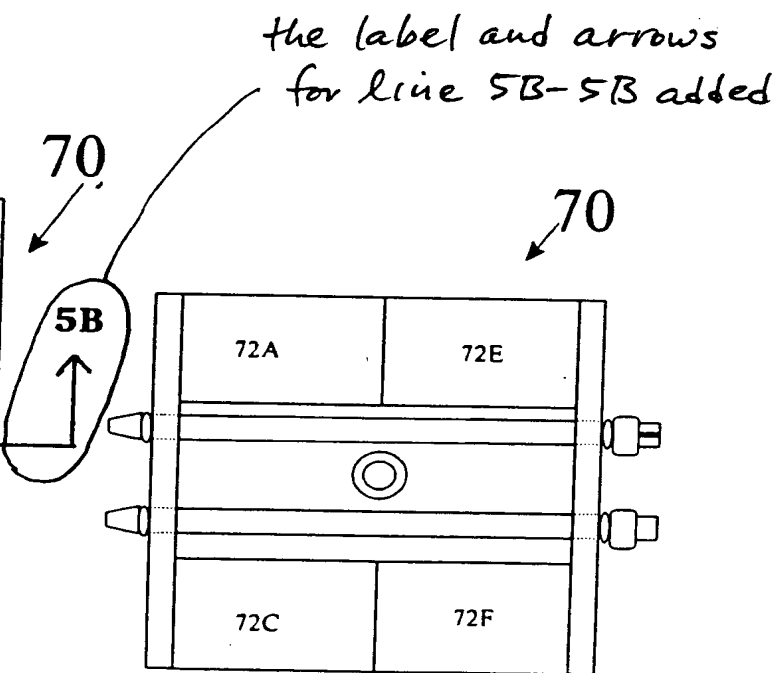


Fig. 5B

the number "244103.1" deleted

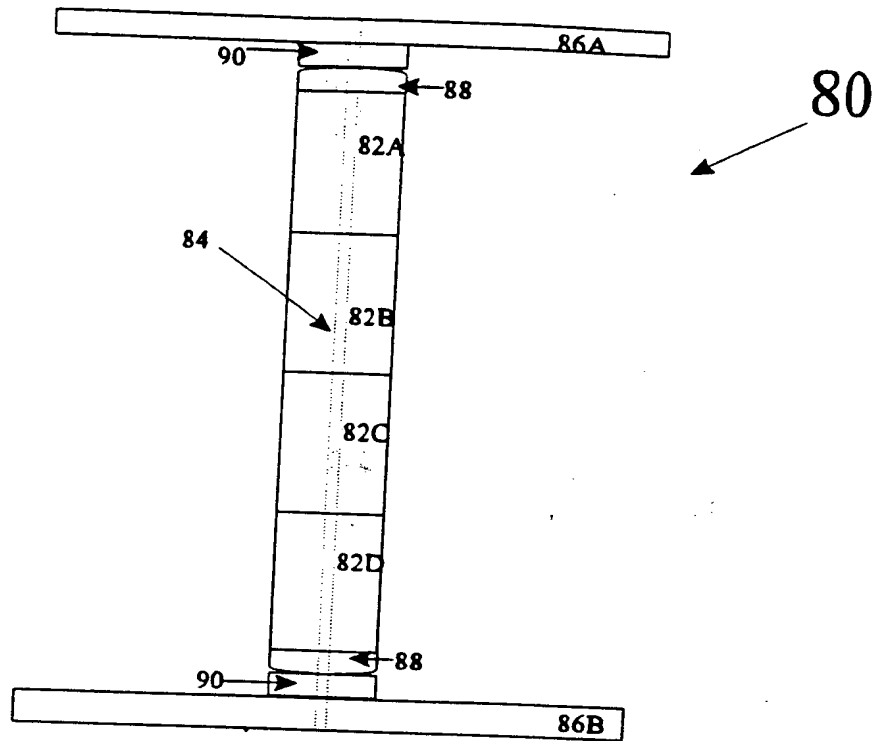
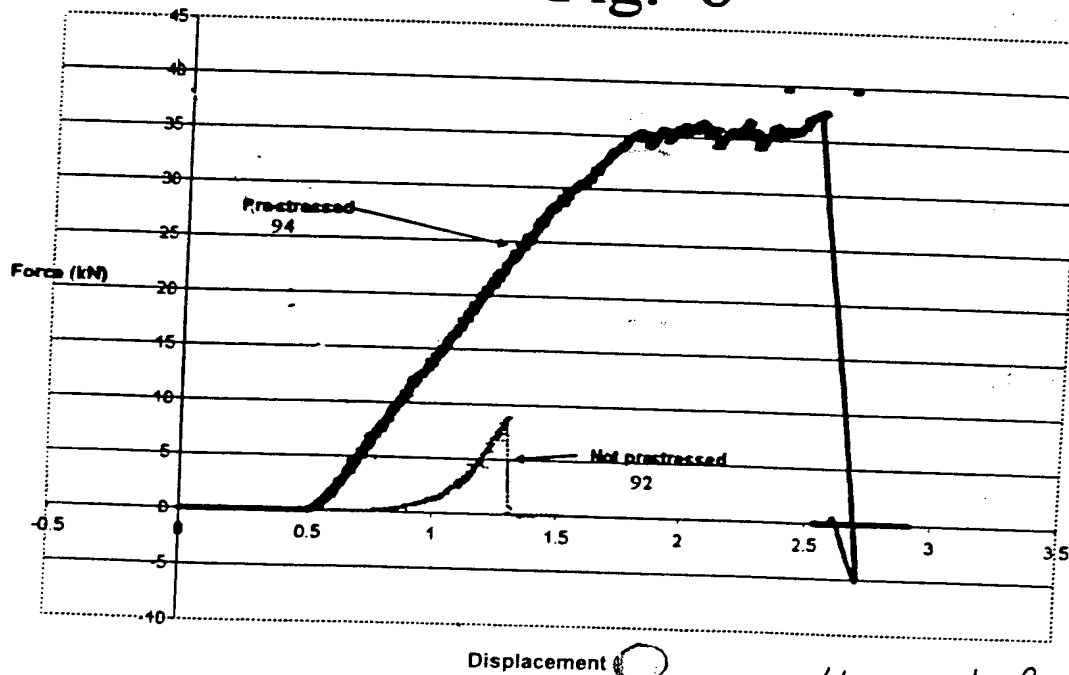


Fig. 6



Displacement

Fig. 7

the unit for displacement,
(mm), deleted